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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/643,895	08/18/2000	Quinn A. Jacobson	SUN-P4914	8680

25920 7590 04/21/2005

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EXAMINER

LI, AIMEE J

ART UNIT	PAPER NUMBER
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2183

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/643,895

Applicant(s)

JACOBSON ET AL.

Examiner

Aimee J Li

Art Unit

2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 19-21 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

3. Claims 1-3 and new claims 19-21 have been considered. New claims 19-21 have been added as per Applicant's request. Claims 4-18 have been cancelled as per Applicant's request.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1-3 and 19 are rejected under 35 U.S.C. 102(b) as being taught by Moyer et al., U.S. Patent Number 5,375,216 (herein referred to as Moyer).

6. Referring to claim 1, Moyer has taught a processor, comprising:

- a. At least one register file (Moyer column 5, lines 34-39 and Figure 1, element 32);
- b. At least one execution unit coupled to the at least one register file (Moyer column 5, lines 34-39 and Figure 1, elements 42, 32, and 27), the at least one register file being available to programs for temporarily storing operands and results (Moyer column 6, lines 3-15 and Figure 1, element 32);
- c. At least one bypass circuit operatively coupled to said at least one register file and said at least one execution unit (Moyer column 5, line 62 to column 6, line 15 and Figure 1, elements 34), said at least one bypass circuit capable of arbitrating access by said at least one execution unit to said at least one register file (Moyer column 5, line 62 to column 6, line 15 and Figure 1, elements 34); and

Art Unit: 2183

- d. A backing register file operatively coupled to said at least one register file (Moyer column 5, lines 34-39; column 6, lines 50-64; Figure 1, element 24; Figure 5; Figure 6; and Figure 7), said backing register file being inaccessible to the at least one execution unit (Moyer column 5, lines 34-39; column 6, lines 50-64; and Figure 1, element 24) and, in at least one mode, is always visible outside the processor and available to the programs at any privilege level (Moyer column 3, lines 6-28; column 3, line 66 to column 4, line 8; column 4, lines 35-54; and Figure 1). In regards to Moyer, the backing register file is the data cache unit, which is only accessible via the load/store unit. The execution units do not have access to the data cache unit, and there are instructions that manipulate the cache control.
7. Referring to claim 2, Moyer has taught wherein the at least one register file comprises a plurality of register files (Moyer column 6, lines 3-15 and Figure 1), the at least one execution unit being operably connected to each register file of said plurality of register files (Moyer column 5, lines 34-39; column 6, lines 3-15; and Figure 1), and where said backing register file is operably connected to each register file of said plurality of register files thereby allowing a transfer of values from any designated location in any designated register file of said plurality of register files to any designated location in said backing register file, and from any designated location in said backing register file to any designated location in any designated register file of said plurality of register files (Moyer column 6, lines 50-64; Figure 1; Figure 5; Figure 6; and Figure 7).

Art Unit: 2183

8. Referring to claim 3, Moyer has taught a connection circuit having a first connection and a second connection, where said first connection is operably connected to said backing register file from the at least one register file and said second connection is operably connected to a main memory from the said backing register file, the connection circuit placing the backing register file in communication with the main memory (Moyer column 5, lines 24-39; column 6, lines 50-64; and Figure 1).

9. Referring to claim 19, Moyer has taught the at least one mode comprising a native mode in which every register in the backing register file is addressable by a unique address (Moyer column 6, lines 50-64; Figure 1; Figure 5; Figure 6; and Figure 7).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 20-21 rejected under 35 U.S.C. 103(a) as being unpatentable over Moyer et al., U.S. Patent Number 5,375,216 (herein referred to as Moyer), as applied to claim 19, in view of Wikipedia "Register Window" (herein referred to as Wikipedia).

12. Referring to claims 20-21, Moyer has not taught

- a. Wherein the backing register file is further operable in a windowing mode wherein the backing register file mimics register windowing functionality wherein less than all the registers in the backing register file is accessible to a particular process at one time (Applicant's claim 20).

Art Unit: 2183

- b. Wherein the backing register file operates in one of the windowing mode or the native mode depending upon instructions in a current instruction stream of a current process (Applicant's claim 21),
 - c. Wherein when the instruction stream includes register windowing instructions, the backing register file operates in the windowing mode, and when the instruction stream does not include register windowing instructions then the backing register file operates in the native mode (Applicant's claim 21).
13. Wikipedia has taught register windowing when there is a procedure call present (Wikipedia search term: register window). A person of ordinary skill in the art at the time the invention was made would have recognized that register windowing is reduces the amount of time necessary to save data to memory when a procedure call is present, since it does not require the data in the register to be moved from the registers to memory, thereby improving performance (Wikipedia search term: register window). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the register windows of Wikipedia in the device of Moyer to improve performance.

Response to Arguments

14. Applicant's arguments with respect to claims 1-3 and 18-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2183

16. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aimee J Li whose telephone number is (571) 272-4169. The examiner can normally be reached on M-T 7:30am-5:00pm.

18. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

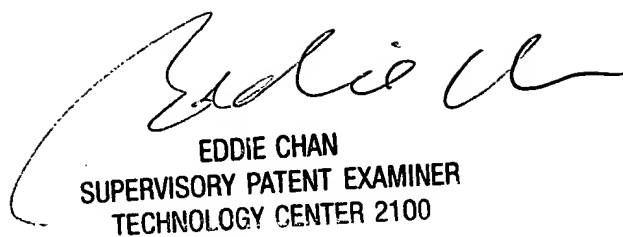
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Application/Control Number: 09/643,895

Page 7

Art Unit: 2183

Aimee J. Li
18 April 2005



EDDIE CHAN
SUPERVISORY PATENT EXAMINER
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